

AiRBike Inc.**Aufgaben**

AiRBike Inc. is a bike producer that has its production facilities located in Indianapolis, Indiana. The company also has a plant in Kassel, Germany. Producing the best bikes for triathletes all over the world, it is famous for the record-breaking bike named Kona.

These bikes can be adapted to each athlete individually by applying different high-end components. Some of the athletes prefer the same component, but mostly the bikes are individually equipped. This leads to a time-consuming production process.

- 1 Recently, the demand for this exclusive bike has increased. For the upcoming summer season, the company expects sales of 4,000 units of this exclusive bike at a sales price of EUR 6,450.00 each. Workers mount the bikes for eight hours per day on 20 workdays per month and can produce a total amount of 800 bikes per month. The variable costs amount to EUR 4,850.00 per bike. 40% of these variable costs are wages. The monthly fixed costs amount to EUR 580,000.00.
 - 1.1 Calculate the costs per unit and the profit per unit at full capacity and the monthly break-even point.

(5 BE)
 - 1.2 A regular client orders an additional amount of 150 bikes this month. This amount can only be realised if the workers work overtime. The costs for an overtime hour are 50 % higher than the normal working hour. The rest of the variable costs stay the same. Calculate the new variable costs of this order, the new costs per unit for the month and the new profit per unit for the month as well as the total costs per month after the adjustment.

(8 BE)
 - 1.3 Evaluate if it makes sense to accept the additional order from the perspective of the board of directors and the employees based on three aspects each.

(6 BE)

AiRBike Inc. still wants to increase the sales figures of the bike. Therefore, the company needs to open up new markets.
 - 1.4 Suggest and explain two different product political measures that could help AiRBike Inc. to increase sales figures in the future.

(8 BE)
 - 1.5 Describe two methods of production that can be used to produce the high-tech bikes. Explain why the chosen methods of production fit to the production of the bikes.

(6 BE)

The production line of AiRBike Inc. in Kassel has been in permanent use for the last five years and needs to be replaced. A new production line for the 4,000 bikes needs to be acquired. Two production lines that would fit best have already been shortlisted. Production line A needs to be imported from Sweden and production line B can be acquired in Borken, Germany (approximately 50 km distance to Kassel). An adaption to different shapes of frames can be done very easily and quickly with production line A. Moreover, the Swedish production line operates more energy efficiently.

- 1.6 Calculate the total costs and the total profit for both machines with the help of the cost and profit comparison method.

Note: The data are provided in material 1.

(8 BE)

- 1.7 Assess the two investment alternatives and decide for one machine based on your calculations and two non-monetary aspects.

(9 BE)

- 2 At the plant in Kassel, a new machine has to be acquired to produce newly developed handlebars. The machine costs EUR 200,000.00 and the board of directors thinks about financing the machine with an installment loan. Two loan offers have already been shortlisted. The economic life of the investment is eight years and there will be no residual value. The financing offers are provided in material 2.

- 2.1 Calculate the interest, the annuity, and the remaining debt for both loans for each year.

(10 BE)

- 2.2 Analyse and assess the results of 2.1.

(6 BE)

- 2.3 Delineate and explain two of the three “maintypes” of loans. Also explain one advantage and one disadvantage of each of them.

(10 BE)

- 2.4 Name four other ways of financing the machine and match them considering internal and external financing.

(4 BE)

- 3 The CEO of Kassel's plant is looking forward for the new investment of the company to enlarging the production possibilities and also has some positive side effects for the region. He is of the opinion that business investment is the "key factor" for economic growth and employment.
- 3.1 Name four general positive side effects for the citizens in a region where large companies expand their production facilities.
(4 BE)
- 3.2 Discuss if investments of companies are the most important precondition for economic growth and employment based on two pros and two cons.
(8 BE)
- 3.3 Present two possible influencing factors on the investment activity of companies and develop two economic policy measures. In your answer include a chain of effects that will stimulate the readiness to invest.
(8 BE)

Material 1**Data of the investment objects**

	Production line A	Production line B
Acquisition costs in EUR	650,000.00	800,000.00
Additional transport costs in EUR	20,000.00	0.00
Useful life in years	5	5
Residual value in EUR	12,000.00	15,000.00
Max. capacity in units	5,000	4,000
Imputed interest rate in per cent	6	6
Variable cost per unit in EUR	4,500.00	4,850.00
Other fixed cost in EUR	150,000.00	150,000.00
Sales price in EUR	6,450.00	6,450.00

Material 2**Data – financing offers****Installment loan offer A**

- loan amount: EUR 200,000.00 (paid out completely when signing the contract)
- interest rate: 5 %
- redemption payment: EUR 40,000.00 (yearly)
- redemption period: 5 years

Maturity loan offer B

- loan amount: EUR 200,000.00 (paid out completely when signing the contract)
- interest rate: 4 %
- redemption period: 5 years